

Trend Study 2-33-01

Study site name: Brazier Canyon.

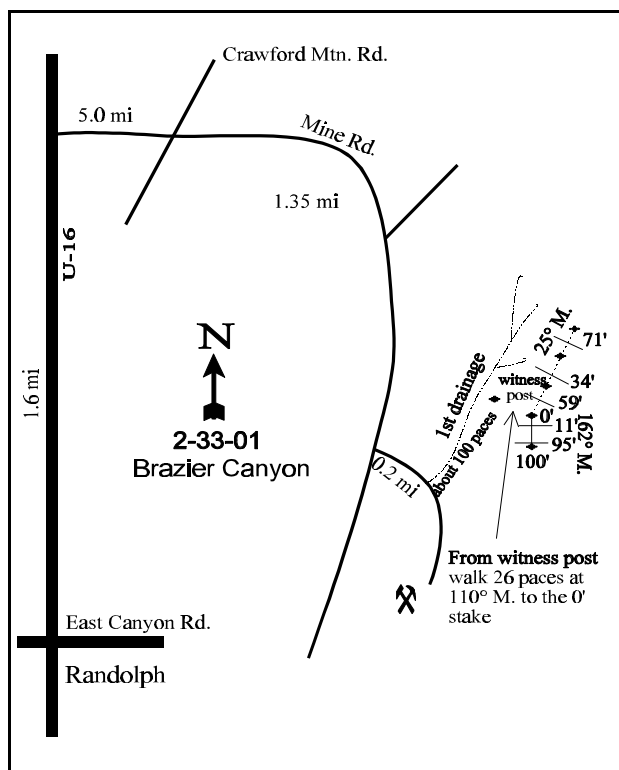
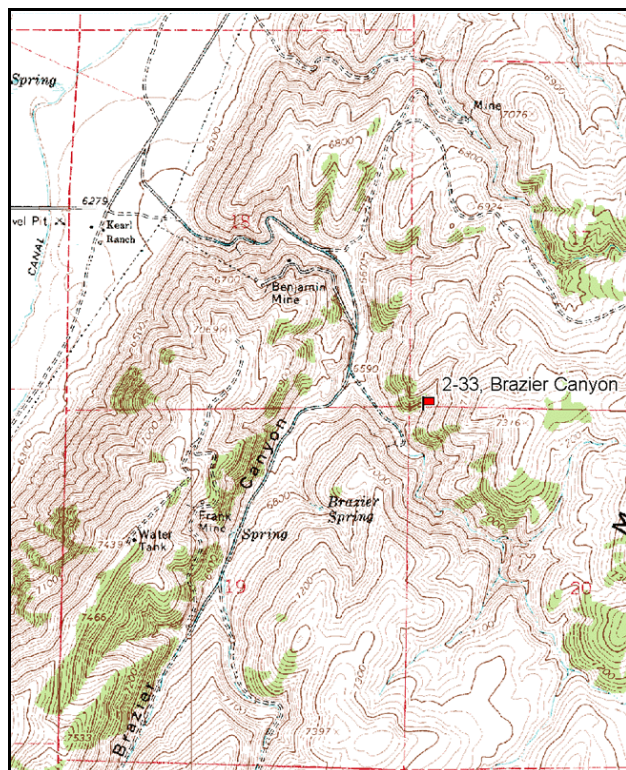
Vegetation type: Black Sagebrush.

Compass bearing: frequency baseline 162 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (59ft), line 3 (34ft), line 4 (71ft).

LOCATION DESCRIPTION

From North Main and East Canyon Road (100 North) in Randolph proceed north on U-16 from 1.60 miles, and turn right (east) onto Crawford Mountain Road. continue east for 5.0 miles to a fork. Turn right (i.e. southeast) and proceed 1.35 miles on this road to where there is a small canyon on the left with a road going up it. Turn left (i.e. east) onto this road, and proceed 0.2 miles to the first ravine on the left (i.e., north) side of the road. Walk up ravine 100 paces to a witness post. From the witness post walk 26 paces at a bearing of 110 degrees magnetic to the 0-foot baseline stake. The 0-foot stake is marked by a browse tag, #7978. The rest of the baseline runs off the 0-foot baseline stake at a bearing of 25 degrees magnetic.

Map Name: Rex Peak

Diagrammatic Sketch

Township 11N, Range 8E, Section 20

UTM 4614824 N, 494144 E

DISCUSSION

Trend Study No. 2-33

The Brazier Canyon trend study, the last of three on the Crawford Mountains, is located in a tributary of Brazier Canyon at approximately 6,780 feet elevation. The site is on a steep (50% to 55%), west-facing slope dominated by black sagebrush. The slope also contains fair numbers of other shrubs, most notably Wyoming big sagebrush and narrowleaf low rabbitbrush. This area is considered winter range for deer. Although the site is available to cattle in spring, the steep slopes prevent most livestock use. Deer use was moderately high in 1996 with a quadrat frequency of pellet groups at 33%. In addition, two deer carcasses were found on the study site in 1984 and two antler drops (spike and 2-point) were seen in 1996. A pellet group transect read along the study site baseline in 2001, estimated 48 deer days use/acre (117 ddu/ha). One cattle pat and 2 elk pellet groups were also encountered.

The soil mapping unit that includes the study site is entitled "Rexmont-Rock Outcrop Complex." Soils in this unit are shallow and excessively drained gravelly loams. They are primarily residual soils derived from limestone and thus are moderately to strongly alkaline and calcareous throughout the 20" soil profile. Permeability is moderate, available water capacity is poor, and both runoff and erosion hazard are high (Campbell and Lacey 1982). Soils at the study site have a loam texture and a soil reaction that is slightly alkaline (pH of 7.7). Effective rooting depth (see methods) was estimated at almost 16 inches in 1996. Rock and pavement are common on the surface. The study site showed evidence of significant sheet erosion and somewhat less serious gully erosion in 1984. Soil pedestalling was evident in 1996 and 2001, but abundant vegetation and litter cover adequately protect the soil from serious erosion. The erosion condition class was determined to be slight in 2001.

Two key browse species occupy the area. Most numerous is black sagebrush which forms a moderately dense and uniform stand. Utilization is generally light to moderate even though the data indicated a substantially high level of decadence in 1984 and 1990. The larger sample taken in 1996 estimated a much lower density of black sagebrush, (5,340 plants/acre compared to 11,199). The lack of large numbers of dead plants in 1996, about 14% (880 plants/acre), suggests that this new density estimate is more reflective of the actual population over the whole area. Utilization in 1996 was light and percent decadence has declined from 48% to 14%. Data from 2001 show similar light use, good vigor, and low decadence for black sagebrush.

Wyoming big sagebrush is less abundant and is hybridizing with black sagebrush. Unlike black sagebrush, density estimates have remained similar between 1990 and 1996. Although more heavily browsed than black sagebrush, Wyoming big sagebrush appears to have a stable population. Due to the dry conditions during the summer of 1996, many of the Wyoming big sagebrush plants were dropping their leaves. This is likely a marginal site for Wyoming big sagebrush under drought conditions. The population declined slightly in 2001. Utilization was similar to 1996, but percent decadence increased from 30% to 42%. Other preferred shrubs found on the site include winterfat and serviceberry which occur in relatively small numbers. Point-quarter data from 2001 estimated 121 juniper trees/acre occupy the site. Average diameter was estimated at almost 4 inches.

Perennial grasses are the most abundant herbaceous component. Within that category, bluebunch wheatgrass is easily the most productive. It produced 41% of the grass cover in 1996 and 66% in 2001. Sandberg bluegrass is also abundant. Forb composition is moderately diverse, yet relatively unproductive and unpalatable. Longleaf phlox, hoods phlox, and fendler sandwort accounted for 63% of the forb cover in 1996 and 56% in 2001. Nevertheless, forbs that occur in this area are not unusual for this range type or for the Crawford Mountains in general.

1984 APPARENT TREND ASSESSMENT

Soil trend appears to be in a state of decline because of persistent erosion due to steep slope, highly erodible soil, and incomplete ground cover. Our assessment of vegetative trend can best be described as tentative. Both key sagebrush species appear stable and perhaps even increasing. An increase in total shrub density appears unlikely though, because the area already has what appears to be a maximum shrub density. In the future, changes in relative abundance of species should be monitored. At the present time, trend seems stable.

1990 TREND ASSESSMENT

Allowing for difficulties in separating sagebrush species at the Brazier Canyon site, the total density of sagebrush declined slightly. A dense stand of sagebrush, dominated by black sagebrush, remains. While the black sagebrush decreased in density, improvements were seen in age class structure, vigor, and growth form. The sagebrush appear moderately hedged, although there is evidence of very heavy deer use. Several deer carcasses were found on the site. A density of 89 juniper/acre was calculated from the point-quarter method. Sandberg bluegrass remains the most abundant grass. The frequency of bluebunch wheatgrass shows a significant decline. Percent cover of bare ground nearly doubled since 1984 (10% to 18%), while litter cover declined. Due to adequate litter and vegetative cover and a significant amount of erosion pavement on the ground surface, current soil erosion is minimal.

TREND ASSESSMENT

soil - slightly declining (2)

browse - stable (3)

herbaceous understory - down slightly (2)

1996 TREND ASSESSMENT

The soil trend appears stable. Percent bare ground declined but this was offset by a decline in litter cover. Herbaceous cover is abundant and well dispersed, effectively limiting erosion. The browse trend appears stable for black sagebrush. Population density declined 52% compared to 1990 data. However, the lack of large numbers of dead shrubs suggests that this new estimate using a much larger sample is a more accurate reflection of black sagebrush density. Utilization of black sagebrush is mostly light to moderate, vigor is good, and percent decadence has declined from 48% in 1990 to 14%. Black sagebrush makes up the majority of the browse cover (68%). Wyoming big sagebrush has a similar density compared to 1990. Utilization is less heavy, yet vigor is poor on 11% of the population, and percent decadence has increased from 22% in 1990 to 30% in 1996. There is one dead plant for every two live ones. Trend for Wyoming big sagebrush appears slightly down, but it only contributes 13% of the browse cover. The browse trend is considered stable overall. Trend for the herbaceous understory is up slightly. Sum of nested frequency for perennial grasses has increased, while sum of nested frequency for perennial forbs has remained stable.

TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - up slightly (4)

2001 TREND ASSESSMENT

Trend for soil is stable. Although percent cover of bare ground increased, relative percent cover of litter and vegetation increased slightly as well. Herbaceous cover is abundant and stable. There is some localized soil movement which is inevitable due to the steep slope. The erosion condition class was determined to be slight. Trend for the key browse species, black sagebrush, is stable. Utilization continues to be light to moderate, vigor normal on most plants, and percent decadence low at 13%. Young plants are abundant and adequate to maintain the stand. Wyoming big sagebrush is of secondary importance. It has declined slightly in density. It displays moderate to heavy use, poor vigor on 19% of the population, and high percent decadence at 42%. Recruitment is poor and there are not currently enough young plants to replace the decadent plants classified as dying (200 plants/acre). This is probably a marginal site for Wyoming big sagebrush, especially during drought. Another negative aspect of the browse trend is the increase in young juniper trees (20 plants/acre to 100) between 1996 and 2001. Over time, the increase in juniper cover could negatively effect the sagebrush understory. Trend for the herbaceous understory is stable. Sum of nested frequency for perennial grasses declined slightly, while sum of nested frequency for perennial forbs increased slightly. Nested frequency of bluebunch wheatgrass increased significantly with frequency of Sandberg bluegrass declining. The forb composition is diverse, but dominated by only a few species including fendler sandwort and 2 phlox's, Hoods and longleaf.

TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - stable (3)

HERBACEOUS TRENDS --

Herd unit 02 , Study no: 33

Type	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
G	Agropyron spicatum	_b 208	_a 119	_a 166	_b 212	87	58	69	84	6.76	10.46
G	Bromus tectorum (a)	-	-	19	43	-	-	9	16	.21	.66
G	Koeleria cristata	_b 23	_{ab} 11	_a 1	_a 6	9	5	1	3	.00	.09
G	Poa fendleriana	_{ab} 8	_a -	_c 27	_{bc} 14	2	-	11	6	.28	.27
G	Poa secunda	_a 190	_c 302	_c 308	_b 252	75	99	97	90	8.95	4.30
G	Sitanion hystrix	-	-	3	-	-	-	1	-	.15	-
Total for Annual Grasses		0	0	19	43	0	0	9	16	0.21	0.66
Total for Perennial Grasses		429	432	505	484	173	162	179	183	16.16	15.13
Total for Grasses		429	432	524	527	173	162	188	199	16.38	15.79
F	Antennaria rosea	10	6	5	5	4	3	2	2	.06	.06
F	Arenaria fendleri	46	44	35	21	20	19	13	12	1.61	.37
F	Arabis holboellii	_a 1	_a -	_b 10	_{ab} 6	1	-	7	2	.03	.06
F	Astragalus convallarius	_b 43	_a 4	_b 25	_b 43	23	2	14	21	.51	.90
F	Astragalus spp.	_b 115	_a 13	_a 8	_a 4	51	7	4	3	.09	.01
F	Astragalus utahensis	1	3	-	2	1	1	-	1	-	.00

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
F	Balsamorhiza sagittata	8	5	2	14	3	4	1	6	.15	.31
F	Castilleja linariaefolia	-	-	-	4	-	-	-	2	-	.06
F	Camelina microcarpa (a)	-	-	-	-	-	-	-	-	-	.00
F	Calochortus nuttallii	1	4	-	-	1	2	-	-	-	-
F	Chaenactis douglasii	3	-	-	-	1	-	-	-	-	-
F	Comandra pallida	-	-	-	8	-	-	-	3	-	.09
F	Collinsia parviflora (a)	-	-	6	-	-	-	3	-	.01	-
F	Cordylanthus ramosus (a)	-	-	7	1	-	-	4	1	.07	.00
F	Crepis acuminata	28	23	24	43	17	10	11	19	.49	.57
F	Cryptantha spp.	_b 39	_a -	_a -	_a -	21	-	-	-	-	-
F	Cymopterus spp.	_a -	_a -	_a -	_b 8	-	-	-	5	-	.05
F	Descurainia pinnata (a)	-	-	3	4	-	-	1	2	.03	.03
F	Erigeron divergens	_a -	_b 34	_a 4	_a 6	-	17	3	2	.06	.06
F	Haplopappus acaulis	_{ab} 4	_a -	_b 14	_{ab} 2	2	-	7	2	.21	.03
F	Hackelia patens	-	9	-	3	-	4	-	1	-	.03
F	Lupinus spp.	-	-	-	2	-	-	-	1	-	.00
F	Machaeranthera canescens	-	-	-	2	-	-	-	1	-	.00
F	Penstemon humilis	_b 10	_a 2	_{ab} 3	_a 1	6	1	3	1	.01	.00
F	Phacelia spp.	6	-	-	-	3	-	-	-	-	-
F	Phlox hoodii	_a 32	_a 34	_b 74	_b 80	16	15	31	35	.93	2.57
F	Phlox longifolia	_a 29	_b 83	_{ab} 60	_a 38	18	36	26	18	.52	.21
F	Senecio multilobatus	3	-	-	1	1	-	-	1	-	.03
F	Solidago spp.	3	-	-	-	1	-	-	-	-	-
F	Trifolium spp.	_a -	_a -	_{ab} 6	_b 13	-	-	4	6	.02	.08
Total for Annual Forbs		0	0	16	5	0	0	8	3	0.11	0.04
Total for Perennial Forbs		382	264	270	306	190	121	126	144	4.73	5.54
Total for Forbs		382	264	286	311	190	121	134	147	4.85	5.59

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --

Herd unit 02 , Study no: 33

Type	Species	Strip Frequency		Average Cover %	
		'96	'01	'96	'01
B	Amelanchier alnifolia	4	1	-	.00
B	Artemisia nova	82	80	10.04	13.06
B	Artemisia tridentata wyomingensis	42	30	1.89	.98
B	Ceratoides lanata	15	15	.07	.30
B	Chrysothamnus viscidiflorus viscidiflorus	29	34	1.03	3.69
B	Eriogonum microthecum	37	36	.87	1.05
B	Juniperus osteosperma	4	7	.56	1.23
B	Opuntia spp.	2	2	-	-
B	Symphoricarpos oreophilus	5	4	.38	.21
B	Tetradymia canescens	0	0	-	.03
Total for Browse		220	209	14.85	20.59

CANOPY COVER --

Herd unit 02 , Study no: 33

Species	Percent Cover		Point-Quarter Tree Data	
	'96	'01	Trees per Acre '01	Average diameter (in) '01
Juniperus osteosperma	1	1	121	3.7

BASIC COVER --

Herd unit 02 , Study no: 33

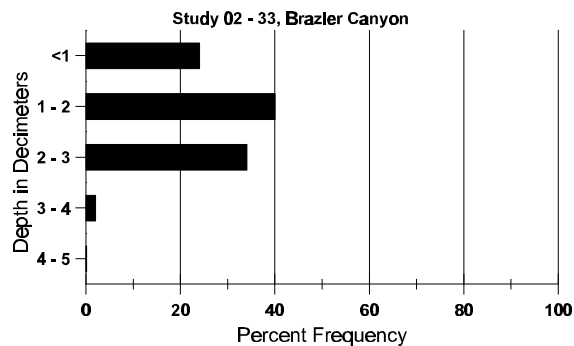
Cover Type	Nested Frequency		Average Cover %			
	'96	'01	'84	'90	'96	'01
Vegetation	346	337	3.00	14.75	35.12	42.21
Rock	323	220	15.50	6.00	13.34	5.89
Pavement	322	336	16.00	24.50	16.43	13.54
Litter	392	371	49.25	32.50	26.29	33.81
Cryptogams	213	152	6.75	4.75	5.01	2.72
Bare Ground	266	268	9.50	17.50	11.36	19.00

SOIL ANALYSIS DATA --

Herd Unit 02, Study no: 33, Brazier Canyon

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
15.5	53.2 (16.8)	7.7	36.7	39.0	24.3	4.0	14.4	105.6	.7

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 02 , Study no: 33

Type	Quadrat Frequency	
	'96	'01
Rabbit	7	5
Elk	-	2
Deer	33	25
Cattle	1	1

Pellet Transect	
Pellet Groups per Acre	Days Use per Acre (ha)
'01	'01
139	N/A
17	1 (3)
618	48 (117)
9	<1 (2)

BROWSE CHARACTERISTICS --

Herd unit 02 , Study no: 33

Herb Unit 02, Study No. 93																																											
A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total																									
		1	2	3	4	5	6	7	8	9	1	2	3	4																													
Amelanchier alnifolia																																											
Y	84	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1																									
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2																									
	96	1	-	-	1	-	-	-	-	-	2	-	-	-	40			2																									
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0																									
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0																									
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0																									
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14	13	0																									
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19	20	0																									
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0																									
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0																									
	96	2	-	-	-	-	-	-	-	-	-	-	-	2	40			2																									
	01	-	-	1	-	-	-	-	-	-	-	-	-	1	20			1																									
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0																									
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0																									
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1																									
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0																									
<table><tr><td>% Plants Showing</td><td><u>Moderate Use</u></td><td><u>Heavy Use</u></td><td><u>Poor Vigor</u></td><td><u>%Change</u></td></tr><tr><td>'84</td><td>00%</td><td>00%</td><td>00%</td><td>+50%</td></tr><tr><td>'90</td><td>00%</td><td>00%</td><td>00%</td><td>-40%</td></tr><tr><td>'96</td><td>00%</td><td>00%</td><td>50%</td><td>-75%</td></tr><tr><td>'01</td><td>00%</td><td>100%</td><td>100%</td><td></td></tr></table>																			% Plants Showing	<u>Moderate Use</u>	<u>Heavy Use</u>	<u>Poor Vigor</u>	<u>%Change</u>	'84	00%	00%	00%	+50%	'90	00%	00%	00%	-40%	'96	00%	00%	50%	-75%	'01	00%	100%	100%	
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Total Plants/Acre (excluding Dead & Seedlings)	'84	66	Dec:	0%																																							
	'90	133		0%																																							
	'96	80		50%																																							
	'01	20		100%																																							

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Artemisia nova																		
S	84	5	-	-	-	-	-	-	-	-	5	-	-	-	333		5	
	90	3	-	-	-	-	-	-	-	-	3	-	-	-	200		3	
	96	9	-	-	-	-	-	-	-	-	9	-	-	-	180		9	
	01	28	-	-	-	-	-	-	-	-	28	-	-	-	560		28	
Y	84	9	-	-	-	-	-	-	-	-	9	-	-	-	600		9	
	90	9	6	-	-	-	-	-	-	-	15	-	-	-	1000		15	
	96	8	-	-	-	-	-	-	-	-	8	-	-	-	160		8	
	01	20	-	-	1	-	-	-	-	-	19	2	-	-	420		21	
M	84	56	26	-	-	-	-	-	-	-	82	-	-	-	5466	7 13	82	
	90	30	47	3	-	-	-	-	-	-	79	-	1	-	5333	10 11	80	
	96	160	62	-	-	-	-	-	-	-	222	-	-	-	4440	12 21	222	
	01	186	45	-	-	-	-	-	-	-	222	9	-	-	4620	12 20	231	
D	84	93	27	1	-	-	-	-	-	-	115	2	4	-	8066		121	
	90	21	57	1	-	1	-	-	-	-	73	1	3	3	5333		80	
	96	24	12	1	-	-	-	-	-	-	32	-	-	5	740		37	
	01	27	5	3	-	-	-	1	-	-	19	-	-	17	720		36	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	880		44	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	900		45	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		25%			.47%			02%			-17%							
'90		63%			02%			04%			-54%							
'96		28%			.37%			02%			+ 7%							
'01		17%			01%			06%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	14132	Dec:	57%			
												'90	11666		46%			
												'96	5340		14%			
												'01	5760		13%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata wyomingensis																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	84	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	96	3	-	-	2	-	-	-	-	-	5	-	-	-	100		5	
	01	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
M	84	3	4	1	-	-	-	-	-	-	8	-	-	-	533	12	12	
	90	10	4	2	-	-	-	-	-	-	14	2	-	-	1066	33	26	
	96	16	26	4	-	-	-	-	-	-	44	-	-	2	920	14	24	
	01	13	13	4	-	-	-	-	-	-	28	2	-	-	600	12	21	
D	84	-	3	1	-	-	-	-	-	-	4	-	-	-	266		4	
	90	-	-	4	-	1	-	-	-	-	3	-	2	-	333		5	
	96	10	12	-	-	-	-	-	-	-	16	-	-	6	440		22	
	01	7	8	5	1	-	-	1	-	-	12	-	-	10	440		22	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	620		31	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	300		15	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		54%			15%			00%			+44%							
'90		22%			26%			09%			- 5%							
'96		52%			05%			11%			-27%							
'01		40%			17%			19%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	865	Dec:	31%			
												'90	1532		22%			
												'96	1460		30%			
												'01	1060		42%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Ceratoides lanata																		
Y	84	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	90	4	-	-	-	-	-	-	-	-	4	-	-	-	266		4	
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	1	4	-	-	-	-	-	-	-	5	-	-	-	333	6	7	5
	90	-	1	1	-	-	-	-	-	-	2	-	-	-	133	6	5	2
	96	13	11	3	-	-	-	-	-	-	27	-	-	-	540	8	10	27
	01	32	2	-	-	-	-	-	-	-	32	2	-	-	680	8	15	34
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	1	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		67%			00%			00%			+14%							
'90		29%			14%			00%			+20%							
'96		38%			10%			00%			+15%							
'01		06%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	399	Dec:	0%			
												'90	465		14%			
												'96	580		0%			
												'01	680		0%			
Chrysothamnus nauseosus consimilis																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	28	65	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	0		-			
												'01	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus viscidiflorus																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	1	-	-	-	-	-	-	1	-	-	66		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	3	-	-	-	-	-	-	-	-	3	-	-	-	200		3	
	90	9	-	-	-	-	-	1	-	-	10	-	-	-	666		10	
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	19	-	-	-	-	-	-	-	-	19	-	-	-	1266	15 12	19	
	90	22	-	1	1	-	-	-	-	-	24	-	-	-	1600	13 11	24	
	96	31	1	-	3	-	-	-	-	-	35	-	-	-	700	13 19	35	
	01	45	-	-	2	-	-	-	-	-	42	5	-	-	940	12 20	47	
D	84	14	-	-	-	-	-	-	-	-	14	-	-	-	933		14	
	90	7	-	-	-	-	-	-	-	-	7	-	-	-	466		7	
	96	6	-	-	-	-	-	-	-	-	6	-	-	-	120		6	
	01	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'84			00%			00%			+12%							
		'90			00%			02%			-69%							
		'96			02%			00%			+18%							
		'01			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	2399	Dec:	39%			
												'90	2732		17%			
												'96	840		14%			
												'01	1020		8%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Eriogonum microthecum																		
S	84	6	-	-	-	-	-	-	-	-	6	-	-	-	400		6	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	6	-	-	-	-	-	-	-	-	6	-	-	-	400		6	
	90	11	1	-	-	-	-	-	-	-	12	-	-	-	800		12	
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	15	-	-	-	-	-	-	-	-	15	-	-	-	1000	9 8	15	
	90	10	-	-	-	-	-	-	-	-	10	-	-	-	666	5 7	10	
	96	56	-	-	8	-	-	-	-	-	64	-	-	-	1280	7 9	64	
	01	62	-	1	6	-	-	-	-	-	68	1	-	-	1380	6 8	69	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+ 5%							
'90		05%			00%			00%			-11%							
'96		00%			00%			00%			+ 6%							
'01		00%			01%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	1400	Dec:	-			
												'90	1466		-			
												'96	1300		-			
												'01	1380		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Juniperus osteosperma																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	01	4	-	-	1	-	-	-	-	-	5	-	-	-	100		5	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	96	3	-	-	-	-	-	-	-	-	3	-	-	-	60	-	3	
	01	1	-	-	-	-	-	-	1	-	2	-	-	-	40	-	2	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+ 0%							
'90		00%			00%			00%			+18%							
'96		00%			00%			00%			+43%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	66	Dec:	-			
												'90	66		-			
												'96	80		-			
												'01	140		-			
Opuntia spp.																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40	3	2	
	01	2	-	-	-	-	-	-	-	-	2	-	-	-	40	6	2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%			+ 0%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	40		-			
												'01	40		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
Y	84	4	-	-	-	-	-	-	-	-	4	-	-	-	266		4	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	5	-	-	-	-	-	-	-	-	5	-	-	-	333	16	6	
	90	18	5	1	-	-	-	2	-	-	22	-	4	-	1733	22	12	
	96	4	-	-	2	-	-	-	-	-	5	-	1	-	120	16	32	
	01	6	-	-	-	-	-	-	-	-	6	-	-	-	120	18	32	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+67%							
'90		19%			04%			15%			-92%							
'96		00%			00%			14%			-14%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	599	Dec:	-			
												'90	1799		-			
												'96	140		-			
												'01	120		-			
Tetradymia canescens																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	12	30	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	0		-			
												'01	0		-			